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(21) International Application Number: PCT/US98/00852 (22) International Filing Date: 16 January 1998 (16.01.98) (30) Priority Data: 60/035,054 17 January 1997 (17.01.97) US (63) Related by Continuation (CON) or Continuation-In-Part (CIP) to Earlier Application US 60/035,054 (CIP) Filed on 17 January 1997 (17.01.97) (71) Applicant (for all designated States except US): MAXYGEN, INC. [US/US]; 3410 Central Expressway, Santa Clara, CA 95051 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): DELCARDAYRE, Stephen, B. [US/US]; 101 Oak Rim Way #14, Los Gatos, CA 95032 (US). TOBIN, Mathew, B. [US/US]; 3450 Granada Avenue #76, Santa Clara, CA 95051 (US). STEMMER, Willem, P., C. [NL/US]; 108 Kathy Court, Los Gatos, CA 95030 (US). NESS, Jon, E. [US/US]; 1220 N. Fair Oaks Avenue #3115, Sunnyvale, CA 94089 (US). MINSHULL, Jeremy [GB/US]; 11 Homer Lane, Menlo		Park, CA 94025 (US). PATTEN, Phillip [US/US]; 2680 Fayette Drive #506, Mountain View, CA 94040 (US). (74) Agents: LIEBESCHUETZ, Joe et al.; Townsend and Townsend and Crew LLP, 8th floor, Two Embarcadero Center, San Francisco, CA 94111-3834 (US). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: EVOLUTION OF WHOLE CELLS AND ORGANISMS BY RECURSIVE SEQUENCE RECOMBINATION (57) Abstract <p>The invention provides methods employing iterative cycles of recombination and selection/screening for evolution of whole cells and organisms toward acquisition of desired properties. Examples of such properties include enhanced recombinogenicity, genome copy number, and capacity for expression and/or secretion of proteins and secondary metabolites.</p>		